

tration and monitoring were estimated by an expert panel survey conducted among 10 rheumatologists. Both health benefits and future costs were discounted at annual rate of 3%. One-way sensitivity analyses were performed on key model parameters by varying the input values by  $\pm 10\%$ . **RESULTS:** Compared to current treatment arm, adding RTX yielded an incremental cost-effectiveness ratio (ICER) of USD\$18,152 (NTD\$589,945) per QALY gained. RTX remained cost-effective under one-way sensitivity testing. Furthermore, applying RTX right after ETAN or ADAL inadequate response (IR) rather than switching between these two TNF inhibitors resulted in significant cost-savings of USD\$14,922 (NTD\$484,994) and USD\$19,707 (NTD\$640,481) respectively. **CONCLUSION:** From Taiwan BNHI perspective, this demonstrates that adding RTX to current treatment options for RA patients who respond inadequately to TNF inhibitor therapy is cost-effective, in addition, applying RTX right after one TNF inhibitor (ETAN or ADAL) IR is cost-saving.

**PMS12**

**COST-EFFECTIVENESS ANALYSIS OF ZOLEDRONIC ACID VERSUS RISEDRONATE FOR THE PREVENTION OF OSTEOPOROTIC HIP FRACTURE IN THE PRIVATE HEALTH CARE SYSTEM IN BRAZIL**

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**OBJECTIVE:** To assess cost-effectiveness of zoledronic acid compared to risedronate in the Brazilian private health care system, by health plan companies' perspective. **METHODS:** Decision analytic model (Markov) to estimate the incremental cost effectiveness ratio of zoledronic acid compared to risedronate for the treatment of osteoporosis in Brazil in 2007. The target population was a hypothetical cohort of women with osteoporosis aged 65 years in a time horizon of 5 years. The epidemiological data related to osteoporosis and drug's efficacy were obtained from critical appraisal of scientific literature. The costs were collected from electronic claims databases of patients enrolled in Brazilian health plans. The outcome analyzed was the cost per osteoporotic hip fracture avoided. Costs and clinical benefits related to the treatment were discounted at a rate of 3%. **RESULTS:** In the base case scenario, zoledronic acid reduced the incidence of fractures in comparison to risedronate (0.33 fractures against 0.46 fractures), with similar annual costs of osteoporosis treatment and its complications in both arms of the model (US\$10,607.35 against US\$10,606.22, incremental costs of US\$1.13). **CONCLUSION:** The study demonstrated that the use of zoledronic acid compared to risedronate could prevent more hip fractures, with similar costs in the Brazilian private health system. This study highlights the savings to health plan companies if an osteoporotic hip fracture can be avoided.

**PMS13**

**COST EFFECTIVENESS OF BIOLOGICS FOR RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW**

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**OBJECTIVE:** To consolidate the cost-effectiveness (CE) data of biologics in Rheumatoid Arthritis (RA) and explore their local applicability. **METHODS:** Systematic review of CE studies (e.g., electronic databases searched to Nov. 2007) comparing biologics with conventional DMARDs for RA patients. Details regarding study characteristics were abstracted using a framework by Drummond et al. 2005 and study quality via Neuman et al. 2000 (score 1–7 higher better). ICER data was extracted, purchasing-power-parity converted and pro-rated to 2006 Canadian \$. **RESULTS:** Nineteen CUA and 2 CEA studies published in 2002–2007 (UK = 7 studies, US 5, Canada = 3, Sweden = 4, Netherlands/Japan = 1 each; ETA = 10, INF = 8, ADA = 2, ANA = 1; payer perspective = 11, societal = 7 and not reported = 3 were identified via screening 337 citations and reviewing 50 full-text articles. Study methods varied (e.g., input efficacy data, time horizon, offset costs) but reporting quality was high (17/21). 20/21 study populations involved RA patients refractory to one or more DMARDs. The direct cost per QALY was \$127–174 K for ETA third line in Canada (n = 2 studies), \$60–104 K mid-sequence in the UK (n = 2), \$60–176 K in Sweden (n = 3), and \$256–483 K in The Netherlands (n = 1). For INF with methotrexate, the cost per QALY was \$99–114 K in Canada (n = 1) and \$62–289 K in the UK (n = 2). It was \$62–293 K for ADA (n = 1) and \$233–1290 K for ANA (n = 1). Other results from industry-funded studies varied (n = 7). Antibodies against TNF was showed to be cost effective at \$50 K per QALY using data from the UK Rheumatology Biologics Registry (n = 1). Two sources of uncertainty frequently identified in sensitivity analyses: long-term disease progression (10/17) and associated QALY (7/17). **CONCLUSION:** For direct cost, the relative cost effectiveness of the biologics is consistent with their relative clinical effectiveness, especially the estimates of HAQ progression while on treatment.

**PMS14**

**A COST-EFFECTIVENESS ANALYSIS OF BIOLOGICAL AGENTS FOR PATIENTS WITH MODERATE TO SEVERE RHEUMATOID ARTHRITIS FOLLOWING INADEQUATE RESPONSE TO METHOTREXATE**

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**OBJECTIVE:** To investigate the cost-effectiveness of biological response modifiers in patients with moderate to severe rheumatoid arthritis who have experienced an inadequate response to methotrexate **METHODS:** A decision analytic model was constructed to estimate the costs and effectiveness of adalimumab, anakinra, etanercept, and infliximab alone or in combination with methotrexate for 6 months. Effectiveness was measured by American College of Rheumatology response criteria (ACR20) as reported in published clinical trials. Costs included direct medical costs (including medication, monitoring, and adverse event costs) and indirect costs due to impaired work productivity. Extensive univariate and probabilistic sensitivity analyses were performed. **RESULTS:** In the base case, costs for 6 months of therapy were